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# WARTIME FARMING

## on the

# Southern Great Plains

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# On the SOUTHERN GREAT PLAINS

## Wartime Farming Means Conservation Farming



For the second time in a generation, farmers and ranchers of the southern Great Plains are producing food for the United States and its allies at war.

This time the need is not for wheat. There is a large surplus on hand—increased production would be wasteful now because other farm products are needed more urgently. We need more of almost every other commodity agriculture can produce. We need more long-staple cotton, more sugar, more meat, more wool, more feed crops, more vegetables, more milk, more eggs, and so on down the list.

This time we cannot afford the risk of one or two big plow-ups of range, pasture, hay land. First, we need all these lands for livestock production. Second, we should think in terms of a long war, of a need for greater output for 3, or 4, or 5 years—no one can tell how long.

Total war demands total production of war goods. Total production on the farm requires farming meth-

ods that build up soil fertility, that make the best use of every drop of moisture, that maintain good range and insure good crops, in spite of dry weather. Conservation farming is not only the best guarantee of successful agriculture on the Plains, it is the best guarantee that war goals will be met.

Some of the most fertile soil in the Nation is on the plains of eastern Colorado and New Mexico, and western Kansas, Oklahoma, and Texas. This region cannot make its greatest contribution to the war effort and to the prosperity and stability of the Nation unless its limited water resources are conserved and properly used and soil erosion is checked.

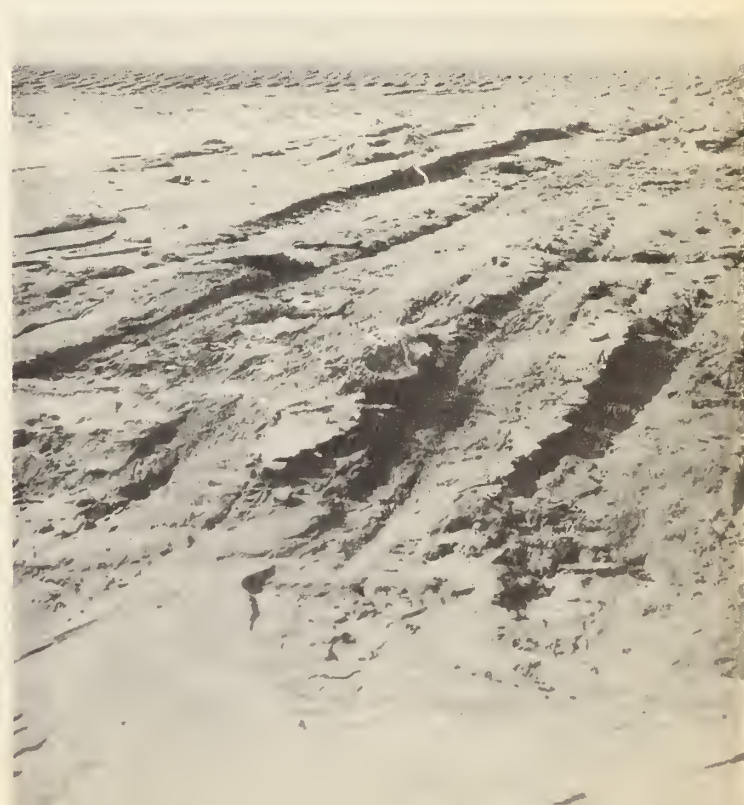
Droughts will continue to come to the Plains, but water-conservation practices will lessen their disastrous effects. High winds and torrential rains will continue to threaten the topsoil, but soil conservation methods will prevent the land from washing and blowing severely.





*Land Like This Will Help Win the War*

*But Land Like This Will Not*





# There Is Much To Be Done, But a Good Start Has Been Made



About one-fifth of the cultivated land of the southern Great Plains—8 million acres—is unsuitable for permanent crop production. That land should be revegetated so that it can be producing livestock. However, about the same amount of unbroken grassland might safely be placed in cultivation when it is needed, if reasonable care is taken.

The revegetation of 8 million acres is a big job but an even bigger conservation job needs to be done on the farm and range lands of the region.

If Plains' farmers and ranchers are to reach their maximum output and thereby contribute most to winning the war, almost all their cultivated land and much of their range land should be treated for water conservation, by such measures as terracing, contour

tillage, contour furrowing, water diversion and spreading, and dam construction. In addition, better crop and range-management practices will help maintain and improve the productivity of practically all the land on the Plains. The use of vegetation, such as strip cropping, cover cropping, border planting, and range reseeding, is needed on large areas of land where the danger of washing or blowing is greatest.

Since 1934, technicians of the Soil Conservation Service have cooperated with landowners and operators in the development of complete conservation plans for approximately 10 million acres on 10,000 farms or ranches of the southern Plains. Various conservation practices have been applied to millions of acres more, by farmers and ranchers participating in the Agricultural Conservation Program. Many other agencies, groups, and individuals have helped extend this work still farther. Conservation measures have been used at some time on about 75 percent of the land in the region.

This is an impressive beginning; but—it is only a beginning.

Much of the work already done is not complete. It may be 80 percent effective in saving soil and water, or it may be 60, or 40, or 10 percent effective. To insure maximum production, year in and year out, conservation treatment must be 90 or 100 percent effective. It must not permit the loss of any soil fertility or any moisture needed for growing crops and grass, except under the severest conditions.



# Greater Production Depends On More and Better Conservation

The long-time goal of agriculture on the southern Great Plains is the most productive continuous use of soil and water on every farm and ranch. This is the goal toward which most of the landowners and operators in this region are working.

At the present rate of progress, this ideal will not be reached for 30 or 40 years. The rate of progress must be speeded up. Another 40 years like the last 40 would ruin many farms and many farmers. Right now actual land values in this region are going down at the rate of 16 million dollars a year as a result of erosion. Farmers and ranchers are losing income at the rate of 80 million dollars a year in the form of rainfall that might be saved and used. And the United States and its allies are losing production—food production—WAR PRODUCTION.

But the immediate goal of agriculture on the Plains is to step up production of war crops and to keep it up. This means that conservation practices must be extended and improved. Enough has been learned about how to hold the soil, how to save the rainfall, how to combat dry weather, torrential rains, and dust-storms that farmers and ranchers can obtain fairly good results with measures they can put into practice themselves.

They can increase food production at once and hold down soil and water losses until some time when the program can be completed. Many conservation measures, like windbreaks, cover crops, and stock-water facilities, are well known to all plainsmen. Other good practices, not so widely used yet, can be carried out by individual farmers and ranchers with only general technical guidance. Enough information can be obtained from attending group meetings, studying existing literature, or discussing problems with specialists to do a reasonably good conservation job. Any farmer or rancher can get general information on conserving his land from the county agent, the county agricultural conservation committee, the land use planning committee, or specialists of the Soil Conservation Service.

It is a good idea to obtain this advice for two reasons: (1) Some conservation practices involve such complex or highly technical procedures that the services of a trained man are necessary if they are to be properly applied, and (2) some practices, although highly beneficial under certain conditions or when properly coordinated with other practices, *may be actually detrimental under other conditions or when used alone.*







## Simple Practices Can Be Applied At Once

There are many soil and water conservation practices which are simply good husbandry. Technical advice or literature may be needed to suggest the general method of application in some instances. In other cases, it may be advisable to make land-classification surveys before the job is begun. But any successful farmer or rancher who has informed himself about the job being attempted usually can install many profitable, practical conservation measures without outside help.

Simple conservation practices should be applied at the earliest possible date to all lands that need them. Food production for the duration of the war demands it. Only those farmers and ranchers who achieve the greatest degree of conservation of soil and water will be able to make the fullest contribution to war needs.







## More Difficult Problems Require Greater Care

Some farms and ranches present conditions that can be corrected only by a revamping of farm operations or by installing complex mechanical measures. In such instances assistance of men trained in this work is generally required. Experience has shown that these measures, undertaken without such assistance, usually are inadequate and require greater expenditures in labor and money. In many cases a complete conservation plan for the entire farm or ranch is needed before a solution to all the problems can be found.

Agencies such as the Extension Service, the Soil Conservation Service, and others are prepared to provide various types of information, assistance, and advice on conservation farming. Farmers and ranchers are urged to take advantage of all such services which may lead to increased production of essential war needs. The United States Department of Agriculture War Boards in each State and county act as clearing houses for all types of information relating to wartime farming.



# Any Farmer or Rancher Can Start These Good Management

## **Use a diversified, flexible cropping system.**

Diversify by growing more sorghums and other feed crops. Adopt a flexible crop rotation, where feasible, in order to meet varying moisture and cover conditions.

Be prepared to plant either spring or fall crops when the soil is moist. If the soil is dry, delay seeding until moisture has accumulated.

## **Use more cover crops.**

Keep erodible land covered with soil-protecting crops as much of the time as possible. Plant drought-resistant sorghums and Sudan grass on hazardous blow fields. Plant close-growing crops on land that is subject to washing.

## **Conserve and use crop residues.**

Keep erodible land protected with a heavy stubble, stalks, or straw mulch as much of the time as possible. Do not graze stubble and stalks heavily. Protect stubble, stalks, and straw from fire. Burning crop residues destroys organic matter and fertility, and leaves the land in a condition to blow or wash away. Practice trashy tillage where feasible.

## **Use border strips and simple strip cropping.**

In wind-erosion areas, where croplands lie adjacent to blowing fields or dirt roads, it may be advisable to plant field borders of sorghums or other wind-erosion resistant crops.

Use a simple system of strip cropping on large fields of crops that permit erosion. In areas where wind erosion is a problem, strips of sorghums should be planted alternately with strips of crops like wheat or cotton that allow the land to erode. Where water erosion is a problem, strips of close-growing or sod crops should be planted on the contour between strips of clean-tilled crops.

On land that is very susceptible to erosion or where erosion has progressed to an advanced stage, border strips and strip cropping should not be depended upon. Such fields should be retired from cultivation or planted solid to soil-protecting cover crops.

## **Use suitable and timely tillage methods.**

Kill weeds and save soil moisture by timely cultivation. Incorporate organic matter in the soil slowly.

Practice protective summer fallow on wheatlands where feasible.

In areas where wind erosion is a problem, implements used in the preparation of land for planting should leave crop residues on the surface or lightly mixed in the topsoil, and provide a cloddy and ridged or furrowed surface. Such operations should be performed when moisture is present in the soil to plow depth.

Timely tillage practices should not be confused with emergency tillage, which may be necessary after serious erosion has developed.

## **Practice contour tillage.**

Contour tillage should be used by all farmers on fields of relatively smooth and moderate slope.

## **Control grazing on range and pasture land.**

Proper grazing is the first and most important requirement for a range- or pasture-conservation program.

Do not stock ranges or pastures beyond their carrying capacity. Reduce the number of animals when feed and grass are not ample to carry them. Leave a residue of grass on the range at the end of the grazing season.

Avoid heavy grazing during the early spring. Rotate the use of pastures. Restrict the grazing of depleted ranges; severely depleted or eroded ranges should be given complete protection from grazing until the grass has recovered. Use temporary pasture crops and feed to supplement ranges and permanent pastures.

Provide sufficient watering and salting places to distribute grazing properly over the range.

## **Build up feed reserves.**

During good crop years the excess feed produced should be stored in a trench silo, in stacks, or otherwise. Feed reserves are needed to maintain livestock during drought years.

## **Retire severely eroded land from use.**

Severely eroded cropland and land that is highly susceptible to erosion should be retired from cultivation. Erosion usually can be checked by contour



# Practices Now

listing or chiseling and by allowing weed growth to cover the land. Sometimes it may be necessary to plant sorghum cover crops on wind-eroded land in order to stop soil blowing and permit weed growth to start.

Severely eroded and depleted ranges or pastures should be retired from use until the grass has recovered. If most or all of the grass cover has been killed and severe erosion has occurred, ranges and pastures should be treated the same as retired cropland.

## Contour furrow range and pasture land.

Contour furrows and ridges may be effectively used on range or pasture land of smooth and gentle to moderate slope that has suitable soil and a good grass cover by any farmer or rancher who can run a contour line.

## Plant trees and shrubs.

Windbreaks, shelterbelts, and wildlife plantings should be made only where the soil, climate, and planting site are known to be suitable.

## Conserve woodlands.

Protect woodlands from grazing and fire. Cut only the mature trees and trees of poor quality for lumber, posts, or fuel. Cut dead and diseased trees. Do not clear-cut woodland.

## Control gullies.

Build brush and temporary check dams in small gullies. Construct fences around large gullies to keep out livestock and allow weeds and grass to stabilize them.

## Build fences around desirable wildlife sites.

## Level wind-blown hummocks and fence-row drifts.

## Clear cacti, brush, and noxious weeds from ranges and pastures.

## Provide fire guards as needed.

## Maintain irrigation and drainage systems.

## Grow a home garden.



# Complex Practices That May Require the Help of Trained Men

## **Making a long-time conservation plan.**

A detailed conservation survey that shows the soil conditions and use capabilities of all land on the farm or ranch is needed for the development of a complete conservation plan. A long-time land use and crop-management plan should be based on the capabilities and needs of the land and the resources of the farmer. If the plan is to be sound, detailed study by a trained technician is usually advisable.

## **Strip cropping and strip rotation.**

Only those farmers who have had successful experience with such cropping systems should undertake complex systems of strip cropping and strip rotation without competent assistance.

## **Terracing.**

It is seldom wise for any farmer to attempt to lay out and build terraces without competent advice or supervision. Well-built terraces are permanent improvements. Improperly built or maintained, they may be inadequate and inefficient.

## **Contour tillage.**

Contour tillage by itself is not sufficient on steep or irregular slopes. On such fields contour tillage usually should be supported by terraces or erosion-resistant strip crops. The contours of the land must be followed closely.

## **Planting native grasses on eroded land.**

Native grass seed are expensive and may easily be wasted if improperly planted or seeded on poorly prepared land. The advice of a technician should be secured before the seeding of large areas of restoration land or depleted range land is undertaken.

## **Grazing management.**

Range surveys are needed in making accurate and complete plans for a permanent system of grazing management on ranges in order to make the maximum *safe* use of grazing resources.

## **Contour furrowing range and pasture lands.**

Contour furrows or ridges are not necessarily beneficial to all range and pasture land. On steep or irregular slopes, shallow soils, or wind-eroded pastures, contour furrows sometimes are detrimental, and should be constructed only under competent technical supervision and after an accurate survey.

## **Gully-control measures.**

Permanent check dams, diversion structures, contour furrows or ridges, and other permanent gully-control structures will be most effective if built under the supervision of one trained in this field. Tree and shrub plantings for gully control should not be attempted on a large scale by the inexperienced without the advice of specialists.

## **Water diversion and spreading.**

Proper sites can be found on many farms and ranches for flood irrigation by the diversion and spreading of run off water on range and cropland, but ordinarily such structures should be planned by an experienced engineer.

## **Pond construction.**

In the selection of sites and construction of permanent ponds, numerous problems arise that require relatively accurate surveys and plans for the most satisfactory results.

## **Development of wildlife sites.**

Where ponds, waste land, or other areas are to be developed as wildlife sites the services of a trained biologist may be needed.

## **Woodland planting and management.**

Before extensive tree plantings are attempted by the inexperienced, a competent forester should be consulted.

## **Development of water facilities.**

Development of new irrigation projects, rehabilitation of existing irrigation facilities, spring development, and many other water problems often require the services of a technician.

## **Stream-bank protection.**

## **Drainage problems.**

## **Coordination of practices.**

These complex conservation practices usually should be applied only after a complete conservation plan has been developed for the farm or ranch. Coordination in the use of these measures often is essential to their success. Many of them will fail if used alone or if not properly fitted to the other practices in use.





## But It's Up to the Farmers and Ranchers To Do the Job

Programs and work plans of soil conservation districts, technical planning and supervision by the Soil Conservation Service technicians, financial assistance from the Agricultural Adjustment Agency, educational work of the State extension services, and numerous programs of other agencies and groups are allied means of helping farmers and ranchers achieve sound and practical conservation of their land and water resources.

## Aid Is Available

Conservation on farm and range is a matter of national concern in wartime.

Conservation farming makes the best use of all the land and all the water. While America is at war we must have efficiency in agriculture as well as efficiency in industry. We cannot afford waste of land, or water, or labor on the farm any more than we can afford waste of metal, power, or labor, in the factory. Any program or system of management for eliminating waste of soil, water, or productive capacity is a conservation program and is helping win the war.

The AAA assists landowners and operators in financing the installation of conservation practices and in adjusting their production to fit national needs. Material assistance in the form of labor, special equipment, or planting stock also is usually available through soil conservation districts, and in some cases through other governmental agencies, where (1) community benefits are derived from the practice, (2) planting stock is scarce or unavailable through normal commercial channels, or (3) special equipment not ordinarily found on farms and ranches is needed.

But technical advice, money, work plans, and knowledge will not save the land or increase its production. The conservation measures must actually be applied to the land by those who own and operate it.

More than 100 million acres on the southern Great Plains can produce more and produce it longer if conservation measures are applied. The Nation and its allies at war need more food. The job of agriculture is clear-cut. It must be done by those on the land.



